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## RAW SEQUENCE LISTING

DATE: 08/27/2004

PATENT APPLICATION: US/10/736,640

TIME: 16:55:31

Input Set : N:\Crf3\RULE60\10736640.raw

Output Set: N:\CRF4\08272004\J736640.raw

1 <110> APPLICANT: Diamond, Don J  
2 <120> TITLE OF INVENTION: IMMUNO-REACTIVE PEPTIDE CTL EPITOPES OF HUMAN  
CYTOMEGALOVIRUS  
3 <130> FILE REFERENCE: 1954-384  
4 <140> CURRENT APPLICATION NUMBER: US/10/736,640  
5 <141> CURRENT FILING DATE: 2003-12-17  
6 <150> PRIOR APPLICATION NUMBER: US/09/984,365  
7 <151> PRIOR FILING DATE: 2001-10-30  
8 <150> PRIOR APPLICATION NUMBER: US 09/692170  
9 <151> PRIOR FILING DATE: 2000-10-20  
10 <150> PRIOR APPLICATION NUMBER: US 09/534639  
11 <151> PRIOR FILING DATE: 2000-03-27  
12 <150> PRIOR APPLICATION NUMBER: US 09/075257  
13 <151> PRIOR FILING DATE: 1998-05-11  
14 <150> PRIOR APPLICATION NUMBER: US 09/021298  
15 <151> PRIOR FILING DATE: 1998-02-10  
16 <150> PRIOR APPLICATION NUMBER: US 08/950064  
17 <151> PRIOR FILING DATE: 1997-10-14  
18 <150> PRIOR APPLICATION NUMBER: US 08/747488  
19 <151> PRIOR FILING DATE: 1996-11-12  
20 <160> NUMBER OF SEQ ID NOS: 44  
21 <170> SOFTWARE: PatentIn version 3.1  
23 <210> SEQ ID NO: 1  
24 <211> LENGTH: 9  
25 <212> TYPE: PRT  
26 <213> ORGANISM: Human cytomegalovirus  
27 <400> SEQUENCE: 1  
28 Asn Leu Val Pro Met Val Ala Thr Val  
29 1 5  
31 <210> SEQ ID NO: 2  
32 <211> LENGTH: 9  
33 <212> TYPE: PRT  
34 <213> ORGANISM: Artificial Sequence  
35 <220> FEATURE:  
36 <223> OTHER INFORMATION: HCMV pp65 sequence variants  
37 <220> FEATURE:  
38 <221> NAME/KEY: MISC\_FEATURE  
39 <222> LOCATION: (2)..(2)  
40 <223> OTHER INFORMATION: Xaa = L,I,M,T or V  
41 <220> FEATURE:  
42 <221> NAME/KEY: MISC\_FEATURE  
43 <222> LOCATION: (9)..(9)  
44 <223> OTHER INFORMATION: Xaa = V,A,C,I,L or T  
45 <400> SEQUENCE: 2

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W--> 46      Asn Xaa Val Pro Met Val Ala Thr Xaa
47          1                      5
49 <210> SEQ ID NO: 3
50 <211> LENGTH: 11
51 <212> TYPE: PRT
52 <213> ORGANISM: Human cytomegalovirus
53 <400> SEQUENCE: 3
54      Tyr Ser Glu His Pro Thr Phe Thr Ser Gln Tyr
55          1                      5                      10
57 <210> SEQ ID NO: 4
58 <211> LENGTH: 11
59 <212> TYPE: PRT
60 <213> ORGANISM: Artificial Sequence
61 <220> FEATURE:
62 <223> OTHER INFORMATION: HCMV pp65 sequence variants
63 <220> FEATURE:
64 <221> NAME/KEY: MISC_FEATURE
65 <222> LOCATION: (2)..(2)
66 <223> OTHER INFORMATION: Xaa = S, T or L
67 <400> SEQUENCE: 4
W--> 68      Tyr Xaa Glu His Pro Thr Phe Thr Ser Gln Tyr
69          1                      5                      10
71 <210> SEQ ID NO: 5
72 <211> LENGTH: 11
73 <212> TYPE: PRT
74 <213> ORGANISM: Human cytomegalovirus
75 <400> SEQUENCE: 5
76      Phe Val Phe Pro Thr Lys Asp Val Ala Leu Arg
77          1                      5                      10
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80 <211> LENGTH: 11
81 <212> TYPE: PRT
82 <213> ORGANISM: Artificial Sequence
83 <220> FEATURE:
84 <223> OTHER INFORMATION: HCMV pp65 sequence variants
85 <220> FEATURE:
86 <221> NAME/KEY: MISC_FEATURE
87 <222> LOCATION: (2)..(2)
88 <223> OTHER INFORMATION: Xaa = V or T
89 <220> FEATURE:
90 <221> NAME/KEY: MISC_FEATURE
91 <222> LOCATION: (11)..(11)
92 <223> OTHER INFORMATION: Xaa = L, R or K
93 <400> SEQUENCE: 6
W--> 94      Phe Xaa Phe Pro Thr Lys Asp Val Ala Leu Xaa
95          1                      5                      10
97 <210> SEQ ID NO: 7
98 <211> LENGTH: 10
99 <212> TYPE: PRT

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100 <213> ORGANISM: Human cytomegalovirus
101 <400> SEQUENCE: 7
102     Thr Pro Arg Val Thr Gly Gly Gly Ala Met
103     1                      5                      10
105 <210> SEQ ID NO: 8
106 <211> LENGTH: 10
107 <212> TYPE: PRT
108 <213> ORGANISM: Artificial Sequence
109 <220> FEATURE:
110 <223> OTHER INFORMATION: HCMV pp65 sequence variants
111 <220> FEATURE:
112 <221> NAME/KEY: MISC_FEATURE
113 <222> LOCATION: (10)..(10)
114 <223> OTHER INFORMATION: Xaa = L, F, or M
115 <400> SEQUENCE: 8
W--> 116     Thr Pro Arg Val Thr Gly Gly Gly Ala Xaa
117     1                      5                      10
119 <210> SEQ ID NO: 9
120 <211> LENGTH: 8
121 <212> TYPE: PRT
122 <213> ORGANISM: Human cytomegalovirus
123 <400> SEQUENCE: 9
124     Phe Pro Thr Lys Asp Val Ala Leu
125     1                      5
127 <210> SEQ ID NO: 10
128 <211> LENGTH: 11
129 <212> TYPE: PRT
130 <213> ORGANISM: Human cytomegalovirus
131 <400> SEQUENCE: 10
132     Arg Pro His Glu Arg Asn Gly Phe Thr Val Leu
133     1                      5                      10
135 <210> SEQ ID NO: 11
136 <211> LENGTH: 12
137 <212> TYPE: PRT
138 <213> ORGANISM: Human cytomegalovirus
139 <400> SEQUENCE: 11
140     Ser Val Leu Gly Pro Ile Ser Gly His Val Leu Lys
141     1                      5                      10
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144 <211> LENGTH: 13
145 <212> TYPE: PRT
146 <213> ORGANISM: Human cytomegalovirus
147 <400> SEQUENCE: 12
148     Pro Thr Phe Thr Ser Gln Tyr Arg Ile Gln Gly Lys Leu
149     1                      5                      10
151 <210> SEQ ID NO: 13
152 <211> LENGTH: 10
153 <212> TYPE: PRT
154 <213> ORGANISM: Human cytomegalovirus

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155 <400> SEQUENCE: 13
156     Glu Phe Phe Trp Asp Ala Asn Asp Ile Tyr
157         1             5             10
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160 <211> LENGTH: 11
161 <212> TYPE: PRT
162 <213> ORGANISM: Human cytomegalovirus
163 <400> SEQUENCE: 14
164     Phe Thr Ser Gln Tyr Arg Ile Gln Gly Lys Leu
165         1             5             10
167 <210> SEQ ID NO: 15
168 <211> LENGTH: 23
169 <212> TYPE: PRT
170 <213> ORGANISM: Artificial Sequence
171 <220> FEATURE:
172 <223> OTHER INFORMATION: HCMV vaccine peptide
173 <220> FEATURE:
174 <221> NAME/KEY: MISC_FEATURE
175 <222> LOCATION: (4)..(4)
176 <223> OTHER INFORMATION: Xaa = cyclohexylalanine
177 <400> SEQUENCE: 15
W--> 178     Ala Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala Asn Leu
179         1             5             10             15
180     Val Pro Met Val Ala Thr Val
181         20
183 <210> SEQ ID NO: 16
184 <211> LENGTH: 23
185 <212> TYPE: PRT
186 <213> ORGANISM: Artificial Sequence
187 <220> FEATURE:
188 <223> OTHER INFORMATION: HCMV vaccine peptide
189 <220> FEATURE:
190 <221> NAME/KEY: MISC_FEATURE
191 <222> LOCATION: (4)..(4)
192 <223> OTHER INFORMATION: Xaa = cyclohexylalanine
193 <400> SEQUENCE: 16
W--> 194     Ala Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala Asn Leu
195         1             5             10             15
196     Val Pro Met Val Ala Thr Val
197         20
199 <210> SEQ ID NO: 17
200 <211> LENGTH: 22
201 <212> TYPE: PRT
202 <213> ORGANISM: Artificial Sequence
203 <220> FEATURE:
204 <223> OTHER INFORMATION: HCMV vaccine peptide
205 <220> FEATURE:
206 <221> NAME/KEY: MISC_FEATURE
207 <222> LOCATION: (3)..(3)

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208 &lt;223&gt; OTHER INFORMATION: Xaa = cyclohexylalanine

209 &lt;400&gt; SEQUENCE: 17

W--&gt; 210 Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala Asn Leu Val

211 1 5 10 15

212 Pro Met Val Ala Thr Val

213 20

215 &lt;210&gt; SEQ ID NO: 18

216 &lt;211&gt; LENGTH: 22

217 &lt;212&gt; TYPE: PRT

218 &lt;213&gt; ORGANISM: Artificial Sequence

219 &lt;220&gt; FEATURE:

220 &lt;223&gt; OTHER INFORMATION: HCMV vaccine peptide

221 &lt;220&gt; FEATURE:

222 &lt;221&gt; NAME/KEY: MOD\_RES

223 &lt;222&gt; LOCATION: (1)..(1)

224 &lt;223&gt; OTHER INFORMATION: dextro

225 &lt;220&gt; FEATURE:

226 &lt;221&gt; NAME/KEY: MISC\_FEATURE

227 &lt;222&gt; LOCATION: (3)..(3)

228 &lt;223&gt; OTHER INFORMATION: Xaa = cyclohexylalanine

229 &lt;400&gt; SEQUENCE: 18

W--&gt; 230 Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala Asn Leu Val

231 1 5 10 15

232 Pro Met Val Ala Thr Val

233 20

235 &lt;210&gt; SEQ ID NO: 19

236 &lt;211&gt; LENGTH: 26

237 &lt;212&gt; TYPE: PRT

238 &lt;213&gt; ORGANISM: Artificial Sequence

239 &lt;220&gt; FEATURE:

240 &lt;223&gt; OTHER INFORMATION: HCMV vaccine peptide

241 &lt;400&gt; SEQUENCE: 19

242 Val Ser Thr Ile Val Pro Tyr Ile Gly Pro Ala Leu Asn Ile Ala Ala

243 1 5 10 15

244 Ala Asn Leu Val Pro Met Val Ala Thr Val

245 20 25

247 &lt;210&gt; SEQ ID NO: 20

248 &lt;211&gt; LENGTH: 22

249 &lt;212&gt; TYPE: PRT

250 &lt;213&gt; ORGANISM: Artificial Sequence

251 &lt;220&gt; FEATURE:

252 &lt;223&gt; OTHER INFORMATION: HCMV vaccine peptide

253 &lt;220&gt; FEATURE:

254 &lt;221&gt; NAME/KEY: MISC\_FEATURE

255 &lt;222&gt; LOCATION: (3)..(3)

256 &lt;223&gt; OTHER INFORMATION: Xaa = cyclohexylalanine

257 &lt;220&gt; FEATURE:

258 &lt;221&gt; NAME/KEY: MOD\_RES

259 &lt;222&gt; LOCATION: (22)..(22)

RAW SEQUENCE LISTING ERROR SUMMARY      DATE: 08/27/2004  
 PATENT APPLICATION:    US/10/736,640      TIME: 16:55:32

Input Set : N:\CrF3\RULE60\10736640.raw  
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**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

eq#:2; Xaa Pos. 2,9  
 eq#:4; Xaa Pos. 2  
 eq#:6; Xaa Pos. 2,11  
 eq#:8; Xaa Pos. 10  
 eq#:15; Xaa Pos. 4  
 eq#:16; Xaa Pos. 4  
 eq#:17; Xaa Pos. 3  
 eq#:18; Xaa Pos. 3  
 eq#:20; Xaa Pos. 3  
 eq#:21; Xaa Pos. 3  
 eq#:22; Xaa Pos. 3  
 eq#:23; Xaa Pos. 3  
 eq#:24; Xaa Pos. 3  
 eq#:25; Xaa Pos. 3  
 eq#:29; Xaa Pos. 3  
 eq#:35; Xaa Pos. 6  
 eq#:36; Xaa Pos. 6  
 eq#:37; Xaa Pos. 6

**Invalid Line Length:**

The rules require that a line not exceed 72 characters in length. This includes spaces.

eq#:1; Line(s) 2

## VERIFICATION SUMMARY

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Input Set : N:\Crf3\RULE60\10736640.raw

Output Set: N:\CRF4\08272004\J736640.raw

46 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0  
58 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0  
94 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0  
116 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0  
178 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0  
194 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 after pos.:0  
210 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17 after pos.:0  
230 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:0  
262 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:0  
286 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:0  
306 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:0  
326 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0  
346 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0  
362 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0  
402 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:0  
490 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:0  
510 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0  
530 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:0